interface specified by the measurement module 108, as described in detail above. In this embodiment, the RIO carrier 110I may also include a register set 612, through which communication with the products/platforms may be effected. In various embodiments, the RIO carrier 110I may provide additional functions which may include I/O scanning, timing and triggering, power-on states, logic, digital I/O timing/counting, data transfer and support for parallel and scanned backplanes, among others.

Thus, in the RIO system, the FPGA 106 may be configurable with measurement and/or control functions. Thus the FPGA 106 may perform measurement/control functions instead of, or in addition to, the computer system 102.

The products and platforms 620 indicated in Figure 6 may provide means for the RIO carrier 110I to communicate with external systems. For example, an Application Programming Interface (API) 622 may allow external systems to read and/or write to the registers in the register set 612 to communicate and/or control the measurement system. For another example, a processor, e.g., a micro-controller 624, and a network interface card 626 may couple the registers to a network 104, through which communications with external systems may be facilitated. In one embodiment, the products and platforms 620 may be comprised in the RIO 110, while in other embodiments the products and platforms 620 may be external to the RIO 110, e.g., may be comprised in computer system 102.

In one embodiment, the RIO 110 may comprise or be coupled to a Personal Digital Assistant (PDA). Thus the PDA may comprise the RIO 110 and may include one or more slots for measurement modules 108. In other words, the PDA may itself be the RIO carrier. Alternatively, the RIO device 110 may be in the form of an optionally detachable RIO module, which may in turn couple to a measurement module 108. The measurement module 108 may in turn be operable to couple to a sensor or actuator, as described above. In one embodiment, the PDA may be operable to program the RIO 110 (i.e., the RIO's programmable hardware element 106) with the interface protocol information provided by the measurement module 108, as described in detail above. Alternatively, the PDA may be programmed as the RIO carrier 110. In one embodiment,

Although the system and method of the present invention has been described in connection with the preferred embodiment, it is not intended to be limited to the specific form set forth herein, but on the contrary, it is intended to cover such alternatives, modifications, and equivalents, as can be reasonably included within the spirit and scope of the invention as defined by the appended claims.

generate hardware description language (HDL) code from the program; and

generate the hardware configuration program from the HDL code;

wherein the hardware configuration program is usable to configure a programmable hardware element comprised in the reconfigurable system to perform the function.

36. The system of claim 35, wherein the program is a graphical program.

37. The system of claim 35, wherein the programmable hardware element is a field programmable gate array (FPGA), and wherein the hardware configuration program comprises a program binary file for the FPGA.

38. The system of claim 33,

wherein said graphical user interface program is executed on a server computer system; and

wherein said user input specifying resources is received from a user computer system accessing the server computer system over a network.

39. The system of claim 33,

wherein said graphical user interface program is executed on a server computer system; and

wherein said user input specifying resources and said user input specifying timing and triggering requirements are received by a user computer system accessing the server computer system over a network.

40. The system of claim 33, wherein the programmable hardware element is a field programmable gate array (FPGA), and wherein the hardware configuration program comprises a program binary file for the FPGA.